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# BULLETIN

## OF THE

# TORREY BOTANICAL CLUB

FEBRUARY, 1917.

### Notes on Rosaceae—XI

PER AXEL RYDBERG

#### ROSES OF CALIFORNIA AND NEVADA

Two years ago I had practically completed the manuscript for the monograph of the genus *Rosa* to be printed in the North American Flora. As this would only make half a part as usually published, and as the rest of the manuscript for the same part, which is to be contributed by other persons, is not yet ready and may not be for some time, I thought it would be advisable to publish some of the notes and some of the descriptions of new species in advance. Besides, Professor Le Roy Abrams, of the Leland Stanford University, has sent me for determination the collection of North American roses, found in the herbarium of the said institution. I therefore think it is a proper time to put on record my present knowledge of the genus *Rosa*, with particular reference to California and Nevada, the two states best represented in that collection.

#### Key to the groups and species

Pistils numerous; styles as well as the upper part of the hypanthium persistent.

Flowers corymbose or, when solitary, supported by bracts; achenes borne both on the inner walls and in the bottom of the receptacle; leaflets large.

Stem with scattered prickles, rarely also with intermixed bristles; sepals distinctly lobed; foliage glandular-punctate, sweet-scented.

I. CANINAE.

Stem, at least the young shoots, bristly; prickles infra-stipular or lacking; sepals entire or only the outer

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ones occasionally with one or two lobes; foliage not sweet-scented.

Flowers solitary, bractless; achenes inserted only in the bottom of the hypanthium; leaflets very small.

Pistils few; styles deciduous with the upper part of the hypanthium which falls off like a ring.

## II. CINNAMOMIAE.

## III. MINUTIFOLIAE.

## IV. GYMNOCARPAE.

### I. CANINAE

A climbing rose.

1. *R. rubiginosa*.

### II. CINNAMOMIAE

Flowers mostly solitary; petals usually 2.5 cm. long or more; hypanthium in fruit 12–20 mm. thick; prickles straight.

Prickles stout, more or less flattened below, ascending; petioles, rachis, and lower surface of the leaflets not pilose, except sometimes on the veins.

Leaflets very thin, pale and slightly glandular-puberulent, but not muriculate beneath.

Leaflets thicker, dark-green on both sides, conspicuously glandular-muricate beneath.

Prickles weak, almost terete; petioles, rachis, and lower surface of the leaflets distinctly pilose.

Flowers mostly corymbose; if solitary, the petals 2 cm. long or less; fruit rarely more than 1 cm. thick.

Prickles more or less curved; leaves more or less softly villous or pilose.

Leaflets not at all glandular beneath, mostly simple-toothed; hypanthium with a distinct neck, often ovoid.

Leaflets conspicuously glandular beneath, more or less double-toothed.

Hypanthium with a distinct neck.

Leaflets broadly oval or obovate; fruit subglobose or broadly obovoid.

Leaflets elliptic; fruit elongate-ellipsoid.

Hypanthium depressed-globose, without a neck; leaflets elliptic or narrowly oval.

Prickles straight or nearly so.

Hypanthium normally not bristly.

Hypanthium globose or nearly so; neck obsolete or inconspicuous.

Sepals lanceolate, with long caudate-attenuate or foliaceous tips, more than 1 cm. long.

Stipules, petioles, and rachis copiously glandular; leaflets orbicular or rounded-ovate, often double-toothed with gland-tipped teeth, more or less glandular-granuliferous beneath.

Leaflets very thin; prickles slender.

2. *R. nutkana*.

3. *R. muriculata*.

4. *R. Brownii*.

5. *R. californica*.

6. *R. Aldersonii*.

7. *R. Greenei*.

8. *R. brachycarpa*.

- Leaflets green on both sides; petals about 2 cm. long. 9. *R. pinetorum*.
- Leaflets pale beneath; petals about 1 cm. long. 10. *R. calavera*.
- Leaflets not very thin, dark-green; prickles stout.
- Leaves scarcely pubescent beneath. 3. *R. muriculata*.
- Leaves decidedly pubescent beneath.
- Leaflets rather simply serrate; hypanthium pilose when young. 11. *R. santae-crucis*.
- Leaflets conspicuously double-serrate; hypanthium glabrous. 12. *R. Dudleyi*.
- Stipules, petioles, and rachis not conspicuously glandular (stipules glandular-denticulate in no. 18).
- Leaflets glabrous or nearly so.
- Leaflets broadly oval, 3-5 cm. long. 13. *R. rivalis*.
- Leaflets obovate to elliptic, rarely 3 cm. long.
- Leaflets usually obovate, not shining; plant not conspicuously prickly. 14. *R. chrysocarpa*.
- Leaflets elliptic, shining; plant usually very prickly. 15. *R. mohavensis*.
- Leaflets more or less pubescent beneath.
- Leaflets villous or pilose beneath, rounded or broadly oval; prickles stout.
- Leaflets sparingly pubescent on both sides, thin; prickles rather few. 16. *R. myriantha*.
- Leaflets pubescent on both sides, densely so beneath, thick; prickles very numerous. 17. *R. Davyi*.
- Leaflets finely puberulent beneath; prickles rather weak.
- Leaflets rounded-oval or suborbicular, thick; stipules conspicuously glandular-denticulate; petals less than 1 cm. long. 18. *R. rotundata*.
- Leaflets elliptic to oval; stipules slightly if at all glandular-dentate; petals larger.
- Sepals decidedly glandular on the back; prickles few, small and ascending. 19. *R. pisocarpa*.
- Sepals not glandular on the back.

- Leaflets broadly oval, thin,  
2-5 cm. long; plant  
nearly unarmed. 20. *R. salictorum*.
- Leaflets narrowly oval or  
elliptic, less than 3  
cm. long.  
Leaflets firm; prickles  
few. 21. *R. ultramontana*.
- Leaflets thin; prickles  
numerous. 22. *R. gratissima*.
- Sepals ovate, less than 1 cm. long, not conspicu-  
ously caudate; leaflets glandular-double-  
toothed, glabrous or slightly glandular-granu-  
liferous beneath. 23. *R. Bolanderi*.
- Hypanthium elongate, with a distinct neck.  
Hypanthium glabrous.  
Leaves finely puberulent beneath; fruit  
elliptic; plant unarmed or nearly so. 24. *R. Pringlei*.
- Leaves glabrous; fruit urn-shaped; prickles  
rather stout, flattened below. 25. *R. Copelandii*.
- Hypanthium pilose when young, ellipsoid;  
leaves pilose, densely so and glandular-  
granuliferous beneath. 26. *R. pilifera*.
- Hypanthium densely bristly or prickly.  
Leaflets thin, usually more than 1.5 cm. long, not  
glaucous; sepals more than 1 cm. long.  
Leaflets densely glandular-granuliferous beneath;  
teeth usually lanceolate in outline. 27. *R. granulata*.
- Leaflets sparingly glandular-granuliferous be-  
neath; teeth ovate in outline. 28. *R. spithamaea*.
- Leaflets firm, glaucous, less than 1.5 cm. long;  
sepals less than 1 cm. long. 29. *R. sonomensis*.
- III. MINUTIFOLIAE  
One species. 30. *R. minutiflora*.
- IV. GYMNOCARPEAE  
Leaves glabrous beneath; prickles very slender.  
Flowers usually solitary, not leafy-bracted; stipules nar-  
row; leaflets with lanceolate teeth; fruit 6 mm. in  
diameter or less.  
Leaflets 5-7, usually more than 1.5 cm. long, the  
terminal one rounded at the base. 31. *R. gymnocarpa*.
- Leaflets 7-9, usually less than 1.5 cm. long, the terminal  
one usually acute or cuneate at the base. 32. *R. prionota*.
- Flowers mostly 2-4 together, leafy-bracted; upper stipules  
broadly dilated; leaflets with broadly ovate teeth; fruit  
6-8 mm. broad. 33. *R. dasypoda*.
- Leaves pubescent beneath; prickles usually stouter. 34. *R. Bridgesii*.

I. CANINAE. The members of this group are natives of the

Old World and are represented in this country by a few introduced species.

I. ROSA RUBIGINOSA L. Mant. 2: 564. 1771

The sweet brier is often cultivated and has escaped in many places in this country. In some parts of the eastern United States it is thoroughly naturalized. On the western coast it has established itself in several places in Oregon and Washington, but the writer has seen herbarium specimens only from one place in California. On account of its stout prickles it has been confused with *R. nutkana*, to which it has no close relationship.

CALIFORNIA: Yreka, 1910, *Geo. D. Butler* 1427, 1802.

II. CINNAMOMIAE. This group is represented in California and Nevada only by species of the true Cinnamomiae, i. e., species with infrastipular spines usually present.

2. ROSA NUTKANA Presl, Epim. Bot. 203. 1849

Although an easily distinguished species, except from the next two species, it has been mistaken for *R. fraxinifolia* Borkh. (i. e., *R. blanda* Ait.) and *R. Woodsii* Lindl. It has also been named *R. caryocarpa* Dougl. and *R. Lyalliana* Crépin, but these names have not been published except in synonymy. *R. aleutensis* Crépin is probably an unarmed form of this species. *R. nutkana* is distributed from Alaska to northern Wyoming and Oregon. It has also been reported from northern California, but the writer has no definite locality cited. Perhaps the record is based on specimens belonging to either of the next two species.

3. ROSA MURICULATA Greene, Leaflets 2: 263. 1912

This species is closely related to *R. nutkana* and perhaps not specifically distinct. It differs in the thicker and smaller leaves densely glandular-muricate beneath and in the often corymbose inflorescence. It ranges from British Columbia to northern California.

CALIFORNIA: Mad River, Humboldt County, 1878, *Violet Rattan*; Arcata, Humboldt County, 1899, *Dudley*.

4. *Rosa Brownii* Rydberg, sp. nov.

Stem slender, terete, glabrous, green or brownish, armed with slender straight prickles which are 5–8 mm. long, terete except the expanded depressed base; leaves five- to seven-foliolate; stipules ovate, acute; petiole and rachis finely pilose and more or less glandular; leaflets thin, 1–3 cm. long, serrate with some of the teeth double, broadly oval, acute at the apex, glabrate above, paler, pilose and slightly glandular-muricate beneath; flowers mostly solitary; pedicels 1–2 cm. long, glabrous; hypanthium globose, glabrous, in fruit about 12 mm. in diameter; sepals lanceolate, caudate-acuminate, usually with foliaceous tips, about 2 cm. long, glabrate on the back, tomentose and slightly glandular-hispid around the margins, and tomentose within; petals broadly obovate, rose-colored, 1.5–2 cm. long; styles distinct, persistent, not exerted; achenes inserted both on the inside and in the bottom of the hypanthium.

This species resembles somewhat *R. nutkana*, but the prickles are weak, not at all flattened, and the petioles, rachis and lower surface of the leaflets decidedly pilose. Much of the Californian material determined as *R. nutkana* belongs here.

CALIFORNIA: North side of Mt. Shasta, 1897, *H. E. Brown* 349 (type, in the herbarium of the New York Botanical Garden); Humboldt Bay, 1901, *Chandler* 1198; Mendocino, 1903, *McMurphy* 270.

5. *ROSA CALIFORNICA* Cham. & Schlecht. *Linnaea* 2: 35. 1827

The original *R. californica* is characterized by its stout, flat, usually curved prickles, corymbose flowers, and its leaflets which are villous on both sides, usually simple-toothed and rarely slightly, if at all, glandular. The hypanthium is usually ovoid with a distinct neck. It is not uncommon throughout California, and two specimens have been seen from Lower California.

LOWER CALIFORNIA: San Ysidro Ranch, *Mearns* 3865 (peculiar form); between Tio Juana River and Laguna, *Mearns* 3504.

6. *ROSA ALDERSONII* Greene, *Pittonia* 5: 110. 1903

This species differs from *R. californica* in the doubly serrate leaflets which are conspicuously glandular-granuliferous and only slightly, if at all, pubescent beneath. The first one to recognize it as different from the typical *R. californica* was C. A. Meyer, who

called it *R. californica Petersiana*.\* Crépin changed the varietal name to *glandulosa*.† He also gave *R. Aschersoniana* Crépin as a synonym. *Rosa Aldersonii* was described from a specimen, not quite of the usual form, having small, more rounded leaflets, short prickles and congested inflorescence. *Rosa Breweri* Greene‡ is, in my opinion, only a stunted and somewhat abnormal form of this species, with densely glandular pedicels and more hairy leaves. *R. Aldersonii* is, besides, very variable, usually with a subglobose hypanthium, with a distinct neck, but sometimes with a somewhat ellipsoid hypanthium. It also varies in having larger or smaller leaflets and with numerous or few flowers. Sometimes the styles are more or less exserted. It is fully as common as the preceding throughout California.

#### 7. *Rosa Greenei* Rydberg, sp. nov.

Stem rather slender, 1 m. or so high, purplish, glabrous, armed with curved infrastipular prickles, which are more or less flattened, 3–6 mm. long; leaves five- to seven-foliolate; stipules narrow, 1–1.5 cm. long, densely glandular-puberulent; petiole and rachis glandular-puberulent and somewhat prickly; leaflets elliptic, acute at both ends, 2–4 cm. long, glandular-double-toothed, puberulent above, glandular-puberulent and slightly pilose beneath; inflorescence corymbiform or paniculate; pedicels 1–2 cm. long, glandular-puberulent; hypanthium elongate-ellipsoid, with a distinct neck, in fruit 2 cm. long and 1 cm. in diameter; sepals lanceolate, caudate-acuminate, about 2 cm. long, glandular-hispid on the back, tomentose within, in fruit persistent and erect; petals about 15 mm. long, rose-colored; styles distinct, persistent, not exserted.

This is related to *R. Aldersonii*, but differs in the narrower leaflets and the decidedly ellipsoid hypanthium, with a long neck.

CALIFORNIA: Santa Cruz Island, July and August, 1886, *E. L. Greene* (type, in the United States National Herbarium); apparently also San Mateo, *Heller 8582*.

#### 8. *Rosa brachycarpa* Rydberg, sp. nov.

Stem apparently tall, stout, purple, armed with curved flattened infrastipular prickles, which are about 5 mm. long; leaves mostly seven-foliolate; stipules not strongly dilated, 1–1.5 cm. long,

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\* Zintr. 19. 1848.

† Bull. Soc. Bot. Belg. 15: 52. 1876.

‡ Leaflets 2: 262. 1912.



glandular-ciliate on the margins and glandular-puberulent on the back; petioles and rachis glandular-puberulent and slightly prickly; leaflets elliptic or narrowly oval, mostly acute at both ends, rather evenly serrate, with broad, occasionally double, and gland-tipped teeth, conspicuously glandular-puberulent and slightly pilose beneath, 2-4 cm. long; inflorescence rather many-flowered, corymbiform; pedicels about 1 cm. long, glabrous or nearly so; hypanthium depressed-globose, without a neck; sepals ovate, caudate-acuminate, about 1.5 cm. long, glabrous on the back, villous on the margins and tomentose within; in fruit erect and persistent; petals about 15 mm. long; styles distinct, persistent, decidedly exserted.

This species is also related to *R. Aldersonii*, but differs from all the other relatives of *R. californica* in the hypanthium lacking the neck, and in the decidedly exserted styles.

CALIFORNIA: Temescal Cañon, near Elsinore, May 23, 1892, *McClatchie* (type, in the herbarium of the New York Botanical Garden).

9. *ROSA PINETORUM* Heller, *Muhlenbergia* 1: 53. 1904

This species has been collected only in the neighborhood of the type station, that is around Monterey Bay. The following specimens have been seen.

CALIFORNIA: Pacific Grove, *Heller* 6817; 1907, *Patterson & Wiltz*; 1908, *L. E. Cox*; Point Pinos, *Heller* 8413; Monterey, *Parry*.

10. *ROSA CALAVERA* Greene, *Leaflets* 2: 257. 1912

This was included in the *R. gymnocarpa* group by Dr. Greene, perhaps on account of the shape of the leaflets and the small flowers, but the sepals and style are persistent and it is more nearly related to *R. pinetorum*, differing in the small flowers and the leaflets which are pale beneath. While *R. pinetorum* is confined to the coast, this species belongs to the Sierra Nevada.

CALIFORNIA: Calveras Big Tree Grove, *E. L. Greene*; Tulare County, *Dudley*, at the following localities: Second Dry Meadow Creek, Kern River, 1895; Board Camp, 1902; Keweath River Valley, 1896, 1385, 1367, 1313a; Redwood Meadow, Alta Peak, 1896, 1642; Coffee Pot Camp, 1897, 1765; Hollow Log Camp, 1900; east of Sequoia Grove.

11. *Rosa santae-crucis* Rydberg, sp. nov.

Stem 1-2 m. high, dark reddish-brown, glabrous, armed with straight stout infrastipular prickles about 1 cm. long and more or less flattened; leaves mostly five-foliolate; stipules 1.5-2 cm. long, pubescent as well as densely glandular-muricate, more or less lobed; free portion ovate, obtuse; petiole and rachis villous and glandular-puberulent; leaflets rounded-oval, 1-3 cm. long, rounded at each end, rather simply serrate, with broad ovate teeth, pilose and glandular-puberulent above, villous and conspicuously glandular-muricate beneath; inflorescence corymbose, many-flowered, leafy-bracted; pedicels short; hypanthium globose, pilose when young, in fruit 12-15 mm. in diameter; sepals lanceolate, caudate-attenuate, 15-20 mm. long, villous and glandular-hispid, erect and persistent in fruit; styles included, distinct, persistent; achenes inserted both in the bottom and on the inside of the hypanthium.

This species suggests closely *R. Aldersonii* and its relatives, but the prickles are straight.

CALIFORNIA: island of Santa Cruz, 1886, *E. L. Greene* (in the Greene herbarium).

12. *Rosa Dudleyi* Rydberg, sp. nov.

A low shrub 3-5 dm. high; branches reddish or greenish, armed with infrastipular straight prickles 5-10 mm. long, somewhat flattened below, and with smaller scattered prickles on the new shoots; leaves usually five- to seven-foliolate; stipules narrow, glandular-puberulent and conspicuously glandular-dentate; free portion lanceolate; leaflets rounded-oval, or the terminal one rounded-obovate, 1-2 cm. long, conspicuously double-serrate with gland-tipped teeth, pubescent on both sides and glandular-puberulent and somewhat paler beneath; flower corymbose; hypanthium glabrous, subglobose, in fruit about 1 cm. broad; sepals densely puberulent on both sides, grayish within, glandular-ciliolate, in age 12-15 mm. long, caudate-acuminate; petals about 1 cm. long.

In general appearance it resembles somewhat *R. sonomensis* and *R. Bridgesii*, but differs from the former in the glabrous, not bristly, hypanthium and from the latter in the persistent styles and sepals, the stouter spines, and larger subglobose fruit. It is most closely related to *R. calavera*, but differs in the thicker, more hairy leaves and stouter prickles.

CALIFORNIA: near Booles Home, Converse Basin, Fresno

County, October 16, 1900, *Dudley* 3388 (in the Dudley herbarium, Leland Stanford University).

13. *ROSA RIVALIS* Eastw. Bull. Torrey Club 32: 198. 1905

This species is related to *R. Woodsii* and *R. pisocarpa*, but its leaflets are much larger, broader and thinner, broadly oval, sometimes almost orbicular and perfectly glabrous beneath. They resemble somewhat those of *R. myriantha*, which, however, has pubescent leaves. I have not seen the type of this species but showed Kellogg & Harford's No. 226 to Miss Eastwood, and she said that she regarded the same as typical *R. rivalis*. In the Missouri Botanical Garden herbarium, the locality of this number is given as San Francisco. This is probably wrong. In the herbarium of the New York Botanical Garden, Kellogg's field label is present, which reads: "Rosa. Long Valley, June 11, 1869, red, 7 or 8 feet high—along shady rivulet—Kellogg." According to Miss Eastwood, Long Valley is not very far from the type locality of *R. rivalis*. A form with leaves somewhat pubescent beneath and somewhat glandular petioles was collected by Mrs. Austin (No. 400) at Mill Creek, California. The following belong to *R. rivalis*:

CALIFORNIA: Long Valley, *Kellogg & Harford* 226; Placer County, 1893, *Mrs. Hardy* (on this sheet Crépin has written: "N'est pas le *R. spithamea* Wats., ou le *californica*, etc.")).

OREGON: Cold Spring, Crook County, 1898, *Coville & Applegate* 131.

14. *Rosa chrysocarpa* Rydberg, sp. nov.

Stem tall, 1–3 m. high, terete, at first light yellowish green, later grayish brown, armed with straight prickles, somewhat retrorse, terete, 3–7 mm. long, usually more or less flattened at the very base, some of them infrastipular, others scattered, of various lengths; young shoots copiously armed with bristle-like prickles; floral branches 1–2 dm. long, armed with mostly infrastipular prickles; stipules adnate, glabrous, 1–2 cm. long, the lower narrow, the upper dilated, glandular-dentate or ciliate on the margins; petiole and rachis glabrous, sometimes with a few prickles; leaflets five to seven, elliptic or oval, thin, glabrous on both sides, yellowish green, coarsely serrate throughout, petioluled, 1–4 cm. long; flowers corymbose, leafy-bracted; pedicels 1–2 cm. long, glabrous; hypanthium globose, glabrous, at first light-green, in fruit about 1 cm.

thick and orange; sepals lanceolate, caudate-attenuate, about 1.5 cm. long, glabrous or nearly so on the back, tomentose on the margins and within, in fruit erect and persistent; styles distinct, persistent, not exserted; achenes inserted both in the bottom and on the inside of the hypanthium.

This species is related to *R. Woodsii*, but differs in the yellowish green leaflets, sharply serrate with teeth directed forward, the orange fruit and usually many-flowered corymbs. The following belong here:

UTAH: Allen Cañon, 1911, *Rydberg & Garrett 9302* (type, in the herbarium of the New York Botanical Garden); Logan, *Miss Mulford 189*.

IDAHO: Castford, 1912, *Nelson & Macbride 1749*; Rock Creek, 1911, *Macbride 1375*; King Hill, 1912, *Nelson & Macbride 1109*.

NEVADA: Franktown, *Kennedy 1935*; Kings Cañon, *Baker 1221*.

CALIFORNIA: Dutch Flat, Placer County, 1909, *Dudley*.

15. *ROSA MOHAVENSIS* Parish, Bull. So. Calif. Acad. 1: 87. 1902

This was originally described as *R. californica glabrata* Parish. Parish overlooked the fact that there was an older *R. californica glabrata* Crépin. The present species is not related to *R. californica* but to *R. Woodsii*, from which it differs in the shining, elliptic instead of obovate, leaflets.

CALIFORNIA: Cushenberry Spring, *Parish 4941*; Aqueduct, Amador County, *Hansen 1813*, in part; Southern California, *Elmer 3732*; *Abrams 2821*.

16. *ROSA MYRIANTHA* Carr. Rev. Hort. 1865: 448. 1865

This species, not uncommon in California, has generally been overlooked. Crépin, apparently not knowing it very well, admitted it as a variety *glabra* of *R. californica*, notwithstanding the fact that it has straight prickles. Regel described it under the name *R. californica*. From his treatment it is not evident that he even knew of the existence of *R. californica* Cham. & Schlecht., but it is evident that he was not familiar with it. The following specimens belong to *R. myriantha*:

CALIFORNIA: Eel River, *Heller 6044*; Red Reef Cañon,

*Abrams & MacGregor* 135; Goose Lake, *Mrs. Austin* 455; "California," *Kuntze* 3205; Berry Cañon, *Heller & Brown* 5546; Butte County, *Mrs. Austin* 1800; *Colby* 752; Sonoma County, *Heller* 5678; Little Chico, *Mrs. Austin* 1807; Round Valley, *Chestnut* 212; San Diego County, *Abrams* 3763; Laguna, *Mearns* 36050; *Schoenfeldt* 3598; Dulzura & El Mido, *Mearns* 3879; Witch Creek, San Diego County, *Abrams* 4914.

OREGON: Barlow Gate, *Lloyd*; Lower Albina, Portland, *Sheldon* 10659; Wimmer, *Hammond* 119, in part.

17. *Rosa Davyi* Rydberg, sp. nov.

Stem stout, 5–10 m. long, glabrous, armed with numerous stout prickles flattened below; leaves five- to seven-foliolate; stipules broad, 1–1.5 cm. long, glandular-dentate on the margin, densely villous, free portion lanceolate to ovate; rachis and petiole villous and sometimes glandular-hispid, usually with a few prickles; leaflets broadly oval, 1–2.5 cm. long, rather firm, rounded at both ends, coarsely and simply serrate, short-pilose above, villous beneath; flowers two or three together or solitary; pedicels 1–2 cm. long; hypanthium globose, glabrous, in fruit 15 mm. in diameter, purple; sepals lanceolate, caudate-acuminate, 15 mm. long or more, villous on the back, tomentose within, erect and persistent in fruit; petals about 2 cm. long, obcordate; styles persistent, distinct, not exserted.

*Rosa Davyi* resembles *R. californica* in the leaf-form, but the prickles are long, straight and very numerous. It is a rare species. Greene collected a specimen without flower or fruit, which was nearly 7 m. high, at San Joaquin. The prickles are straight, flat, and nearly 1 cm. long. It evidently belongs here.

CALIFORNIA: Saratoga, *Davy* 263 (type, in the herbarium of Columbia University); Mendocino, *McMurphy* 270.

18. *Rosa rotundata* Rydberg, sp. nov.

A stout shrub, more than 5 dm. high; new canes copiously armed with slender, straight, almost terete prickles, 5–10 mm. long; branches red or purplish, with smaller infrastipular and scattered prickles; leaves mostly five- to seven-foliolate; stipules large, lance-ovate, puberulent on both sides, conspicuously glandular-denticulate, 1–1.5 cm. long; leaflets rounded, oval or suborbicular, 1–1.5 cm. long and nearly as broad, finely puberulent on both

sides, coarsely crenate-serrate with broad teeth; flowers corymbose; hypanthium round-ellipsoid or globose, with a short neck; sepals ovate, caudate-acuminate, about 8 mm. long, villous within and on the margins; petals 8-10 mm. long.

This species is related to *R. pisocarpa* and *R. ultramontana*, but differs in the shorter and broader thicker leaflets, the more prominent armature, and the small flowers.

NEVADA: mountains west of Franktown, 1912, *Heller 10520* (type, in the herbarium of the New York Botanical Garden).

19. *ROSA PISOCARPA* A. Gray, Proc. Am. Acad. 8: 382. 1872

Professor Crépin badly misunderstood this species. Nearly anything with a small hypanthium he referred to it. Specimens of *R. Woodsii*, *R. Fendleri*, *R. ultramontana*, together with two undescribed species, and even *R. Engelmanni* we find determined as *R. pisocarpa* by him. It belongs purely to the Columbia Valley region and is not found in the Rocky Mountain states. It is characterized by the elliptic or oval leaflets, finely puberulent beneath, the comparatively short and glandular sepals, the numerous flowers and short ascending straight prickles.

The only specimen from California seen by the writer is one collected by Mrs. Austin without definite locality.

20. *Rosa salictorum* Rydberg, sp. nov.

Stem slender, 3-5 m. high or in open places lower, unarmed or nearly so, except the new shoots, which are bristly at the base; infra-stipular spines seldom present; leaves five- to seven-foliolate; stipules adnate to the petioles, 1.5-2 cm. long, the upper dilated, more or less toothed, finely puberulent; petioles and rachis unarmed, puberulent; leaflets broadly oval, coarsely and evenly serrate, thin, equally green on both sides, glabrous above, finely puberulent beneath, rounded or acute at both ends, 2-4 cm. long; flowers corymbose, conspicuously leaf-bracted; pedicels glabrous; hypanthium glabrous, globose, contracted above, in fruit about 1 cm. broad; sepals lanceolate, caudate-acuminate, about 15 mm. long, glabrous on the back, tomentose within and on the margins, erect and persistent in fruit; petals pink, about 15 mm. long; styles distinct, persistent, not exserted.

This species is related to *R. pisocarpa* and *R. ultramontana*, but differs from both in the large, thin, broadly oval leaflets and the few slender prickles. It is almost unarmed except on the new shoots. From *R. pisocarpa* it also differs in the non-glandular sepals.

NEVADA: Gold Creek, July 25, 1912, *Nelson & Macbride 2113* (type, in the herbarium of the New York Botanical Garden), also *2113*; McDonalds Creek, *2156*; Owyhee River, *2196*; Big Creek, Lander County, *Kennedy 4106, 4544*; Martin Creek, 1913, *4491*; Star Canyon, southeast of Death, *Heller 10570*.

21. *ROSA ULTRAMONTANA* (S. Wats.) Heller, *Muhlenbergia* 1: 107. 1904

This was first described as *R. californica ultramontana* S. Wats.,\* but is not at all related to that species. It is closely related to *R. pisocarpa* and distinguished from that mainly by the sepals which are not at all glandular. It belongs to the Great Basin, is rather common in Nevada as well as Idaho and eastern Oregon, but not so common in California. The following specimens have been seen.

CALIFORNIA: Little Grizzly Creek below Genessee, Plumas County, 1907, *Heller & Kennedy*; Hornbrook, 1909, *Rusby*; Lake Tahoe, 1909, *Dudley*; Hot Springs, Sierra Valley, 1909, *Dudley*; El Dorado County, 1900, *Dudley*.

22. *ROSA GRATISSIMA* Greene, *Fl. Franc.* 73. 1891

To this belong the following specimens:

CALIFORNIA: Griffins, *Elmer 3732*; South Fork of Kings River, 1899, *Eastwood*; Bear Valley, *Abrams 2821*; Water Cañon, *Abrams & MacGregor 482*; Sky Valley, *Culbertson 4873*; Long Pine, 1897, *M. E. Jones*; Bear Valley, *Hall 1324 (?)*; Colby, *Mrs. Austin (?)*; South Fork of Santa Anna, *Grinnell 232*; San Bernardino Mountains, *Parish 3274*; North Fork of Kern River, *V. Bailey 1720*; Big Arroya, Soda Springs Trail, Tulare County, *Dudley 2307*; Glenbrook, near Lake Tahoe, 1906, *Dudley*; Lookwood Creek, Mount Pinos Region, *Dudley & Lamb 4634*.

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\* Bot. Calif. 1: 187. 1876.

23. *ROSA BOLANDERI* Greene, Leaflets 2: 261. 1912

This species is related to the *R. Covillei* of Oregon, but the leaflets are thinner, glandular, double-toothed and decidedly glandular-pruinose beneath. Crepin determined the type as *R. gymnocarpa* with the remark that the sepals were persistent. Dr. Greene also classified it in the *Gymnocarpae*, but it evidently does not belong there.

CALIFORNIA: Oakland, *Bolander*.

24. *Rosa Pringlei* Rydberg, sp. nov.

Stem dark gray, 1 m. high or more, terete, slender, sparingly armed with small straight infrastipular prickles, 3–5 mm. long, or wholly unarmed; branches 1–3 dm. long, usually unarmed; stipules adnate, rather narrow, 1 cm. long or less, densely and finely puberulent on the back; the free portions lanceolate, ascending, spreading, slightly glandular-ciliate; petiole and rachis densely puberulent, not at all glandular; leaflets five or seven, elliptic, 2–3 cm. long, acutish at both ends, rather firm, finely puberulent on both sides, densely so, almost velvety, and paler beneath; flowers corymbose, two to five together; pedicels 1–2 cm. long, glabrous; hypanthium ellipsoid, acute at the base, above produced into a distinct neck, glabrous, in fruit 9–10 mm. thick, 12–14 mm. long, dark-purple; sepals lanceolate, caudate-attenuate, 12–15 mm. long, finely puberulent, in fruit erect and persistent; achenes inserted both in the bottom and on the insides of the hypanthium.

This is related to *R. pisocarpa*, *R. ultramontana* and *R. Macounii*. The leaves are dark green above, finely toothed with rather blunt teeth and the hypanthium is decidedly ellipsoid, with a neck. The plant is almost unarmed. The type in the Columbia University herbarium has no prickles, but the same number in the United States National Herbarium has a single straight prickle about 5 mm. long. This was determined as *R. pisocarpa* by Crépin. Suksdorf's specimen is unarmed and Sheldon's has only a few prickles.

CALIFORNIA: Siskiyou County, 1882, *Pringle* (type, in the herbarium, Columbia University); 1910, *G. D. Butler 1352*; Vicinity of Rawhide, 1905, *Roxana Stinchfield 25*, in part; near Stirling, 1913, *Heller 10801*.

WASHINGTON: Klickitat County, 1885, *Suksdorf*.

OREGON: Wallowa River, 1897, *Sheldon 8687(?)*.



25. *Rosa Copelandii* Greene, sp. nov.

Stem dark purple, terete, shining, sparingly armed with straight infrastipular prickles, which are about 5 mm. long, rather stout and somewhat flattened below; floral branches 1–2 dm. long, purple, more or less armed; stipules 1–2 cm. long, adnate, glabrous, more or less dilated, thin, often tinged with purple; free portion semi-lunate, acuminate; petiole and rachis glabrous, often slightly prickly, purplish; leaflets five or seven, oval or elliptic, thin, perfectly glabrous on both sides, finely serrate, 1–3 cm. long; flowers corymbose; pedicels glabrous, short, 1–1.5 cm. long; hypanthium glabrous, urn-shaped, rounded at the base, prolonged above into a distinct neck, in fruit 9–10 mm. thick, 10–12 mm. long; sepals lanceolate, about 15 mm. long, caudate-attenuate, glabrous on the back, tomentose on the margins, in fruit erect and persistent; achenes inserted in and near the bottom of the hypanthium.

Dr. Greene recognized this species, but for some reason did not publish it. It is characterized by its ovoid urn-shaped hypanthium, with a conspicuous neck, and glabrous leaves.

CALIFORNIA: Mt. Eddy, Siskiyou County, September 8, 1903, *Copeland* [Baker's distribution number] 3875.

26. *Rosa pilifera* Rydberg, sp. nov.

Stem 1 m. high or more, at first yellowish, in age dark gray, terete, armed with straight infrastipular and scattered prickles 3–5 mm. long, somewhat flattened below; floral branches 1–3 dm. long, usually sparingly armed; stipules adnate, the lower narrow, the upper dilated, 1–1.5 cm. long, pilose and glandular on the back, glandular-ciliolate on the margins; free portion linear-lanceolate to ovate, ascending; petiole and rachis pilose, glandular and sometimes with a few weak prickles; leaflets five to seven, thin, oval, 2–3.5 cm. long, sparingly pilose above, more densely so and somewhat glandular-pruinose beneath, usually more or less double-toothed and the teeth often gland-tipped; flowers corymbose; pedicels 1–3 cm. long, more or less pilose; hypanthium ellipsoid, with a neck, pilose at least when young, in fruit 8–10 mm. thick, 12–15 mm. long; sepals lanceolate, caudate-attenuate, 1.5 cm. long, more or less pilose, in fruit erect; petals about 1.5 cm. long; styles distinct, persistent, not exserted.

This species has the leaflets of *R. Aldersonii*, i. e., double-toothed and glandular beneath, but they are thinner, the prickles are slender, straight, or rarely slightly curved, and the young hypan-

thium at least is covered with fine soft hairs. The following belong here:

CALIFORNIA: San Francisco, *Dr. Bolander* (type, in the herbarium of Columbia University); Berkeley, *Burt Davy 854*; Pine Grove, Amado County, *George Hanson 7310*; no locality, *Kellogg & Harford 225* in part; Sierra National Forest, 1912, *Abrams 4969*.

27. *ROSA GRANULATA* Greene, Leaflets 2: 262. 1912

This is closely related to *R. spithamea*, but differs in the more glandular leaves and narrow teeth. Perhaps not specifically distinct. It is known only from the type collection at San Luis Obispo.

28. *ROSA SPITHAMAEA* S. Wats. Bot. Calif. 2: 444. 1880

This is a rather local species characterized by its almost herbaceous stems, slender prickles and bristly receptacle.

CALIFORNIA: Trinity River, between Hyampore and Hooper, 1878-1883, *Rattan*; Trinity Mountains, *Marshall*; Lake County, 1902, *Heller*; "California," *Torrey*.

OREGON: Wimmer, *Hammond 120*.

29. *ROSA SONOMENSIS* Greene, Fl. Franc. 72. 1897

This is related to *R. spithamea*, but differs from the other Californian species with prickly fruit in the firm glaucous leaves, the densely prickly stem, and the short sepals.

CALIFORNIA: Petrified Forest, Sonoma County, 1883, *Greene*; Mount Tamalpais, *V. Bailey 531*; 1885, *Rattan*; Converse Basin, Fresno County, 1904, *Dudley*.

III. MINUTIFOLIAE. This group is represented by the following species and by two species in New Mexico.

30. *ROSA MINUTIFOLIA* Engelm. in Parry, Bull. Torrey Club 9: 97. 1882

This species is a native of Lower California and may be expected in San Diego County, California.

LOWER CALIFORNIA: Todo Santos Bay, *Parry, Pringle, Orcutt*; Ensenada, *M. E. Jones 3697, Anthony 189*; San Quentin Bay, *Palmer 619*.

IV. GYMNOCARPAE. This is a little group of species all confined to the North American Pacific coast.

31. ROSA GYMNOCARPA Nutt.; Torrey & Gray, Fl. N. Am. 1: 461. 1840

Until recently only one species, *Rosa gymnocarpa* Nutt., and one variety, var. *pubescens* S. Wats., have been admitted to this group. *R. gymnocarpa* ranges from British Columbia to Montana, Idaho and California. Dr. Greene in one paper\* described not less than twelve species which he regarded as belonging to this group and seven more related to it but "not at all gymnocarpous." It is impossible for me to follow him in his segregation of *Rosa gymnocarpa*, and several of his "gymnocarpous" species do not belong to the group at all.

The Greenian species really belonging to the *Gymnocarpae* are the following: *R. glaucidermis*, *R. crenulata*, *R. prionata*, *R. piscatoria*, *R. abietorum*, *R. amplifolia*, *R. leucopsis*, *R. Helleri*, *R. apiculata*, and *R. dasypoda*. Of these the only clearly distinct species is *R. crenulata*, which, however, has an older name, *R. Bridgesii* Crépín. Of the others I have retained as tentative species *R. prionata*, *R. leucopsis* and *R. dasypoda*, but none of these are too good as species. They are fairly good varieties, but the rest are hardly worth naming even as forms. As most of them belong to the Columbia Valley region, I shall discuss them further in a subsequent paper and only mention those found in California.

32. ROSA PRIONOTA Greene, Leaflets 2: 256. 1912

The species is distinguished from *R. gymnocarpa* by the small and often more numerous (seven to nine instead of five to seven) leaflets with narrower and sharper teeth. The terminal leaflet is usually cuneate at the base instead of rounded. The fruit is described as globose. Both in this species and in *R. gymnocarpa* the immature hypanthium is ellipsoid. If only one

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\* Leaflets 2: 254-261. 1912.

to three achenes are developed, it remains so even at maturity, but if more achenes develop the fruit becomes pear-shaped or globose. The form of the fruit is, therefore, no specific character. *R. apiculata* Greene and *R. piscatoria* are forms of this species. The former will be discussed in a subsequent paper. The latter represents a strong more bristly form of *R. prionota*.

*Rosa prionota* is more common in California than the typical *R. gymnocarpa*.

33. *ROSA DASYPODA* Greene, Leaflets 2: 260. 1912

This is perhaps a good species. I had segregated out the same as such, although I had assigned as the type a Californian specimen which shows the characters better than Dr. Greene's type. The flowers are nearly always corymbose, i. e., two to four together and leafy-bracted, the leaflets thicker and not with semi-pellucid veins, the teeth broader and more rounded, and the fruit is larger, 6-8 mm. instead of 4-6 mm. in diameter.

It ranges from British Columbia to northern California, where it is represented by the following specimens:

CALIFORNIA: Siskiyou County, *Copeland* [Baker's distribution number] 3874.

34. *ROSA BRIDGESII* Crépin, Bull. Soc. Bot. Belg. 15: 54. 1876

This is a good species and is the same as *R. gymnocarpa pubescens* S. Wats.\* and *R. crenulata* Greene.† Crépin gave this species a short description, but later, after seeing Watson's treatment of the same, retracted and reduced it to a variety. I was a little doubtful whether the name *R. Bridgesii* belonged to this species or to *R. sonomensis* or to some related species, but Miss Eastwood, who has seen the type of *R. Bridgesii*, has told me that it is the same as *R. gymnocarpa pubescens* S. Wats. The following specimens have been seen from California:

CALIFORNIA: *Bridges 95*; Pine Ridge, Fresno County, *Chandler 171*; *Baker 5500*; Silver Mountain Pass, *Brewer 1915*; Havelock, Kern County, *Grinnell 217*; Tuolumne Big Trees, 1911, *Abrams 4701*; Shut Eye Pass, 1912, *4928*; Yosemite Park, 1915, *5407*.

\* Bot. Calif. 1: 187. 1876.

† Leaflets 2: 255. 1912.

There are, in the collections examined, a few specimens from Nevada and the Klamath region of California which can not be referred to any of the species treated above. Some of these may be referred to *R. Macounii*, but the localities are out of the known range of that species. The rest may belong to two or three apparently undescribed species from the Columbia Valley and the Great Basin, but the limitations of these species are still unsettled.

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